WHAT IS CLAIMED IS

1.   A system for inspecting components comprising:

An axial lighting system illuminating the component with axial lighting to allow one or more features of the component to be located; and

an off-axis lighting system illuminating the component with off-axis lighting in the absence of the axial lighting to allow the component to be inspected to locate one or more features.

2.   The system of claim 1 further comprising an image analysis system receiving image data of the component and analyzing the image data to locate the one or more features.

3.   The system of claim 2 wherein the image analysis system further comprises a feature locator system receiving the image data and generating feature edge data.

4.   The system of claim 2 wherein the image analysis system further comprises a defect locator system receiving the image data and generating defect indication data from the pixel data.

5.   The system of claim 2 wherein the image analysis system further comprises a protrusion analysis system receiving the image data and generating projection size data.

6.   The system of claim 2 wherein the image analysis system further comprises a recess analysis system receiving the image data and generating recess analysis data.

5   7.   The system of claim 2 wherein the image analysis system further comprises a missing feature system receiving image data and generating missing feature data.

8.   The system of claim 2 wherein the image data

10   further comprises pixel data.

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9.   A system for inspecting components comprising:

an off-axis lighting system illuminating the component with off-axis lighting to allow the component to be

5   inspected to locate one or more features; and

an image analysis system receiving image data of the component generated when the component is being illuminated with the off-axis lighting and analyzing the image data to locate the one or more features.

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10.   The system of claim 9 wherein the image analysis system further comprises a feature locator system receiving the image data and generating feature edge data.

15   11.   The system of claim 2 wherein the image analysis system further comprises a defect locator system receiving the image data and generating defect indication data from the pixel data.

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12.   A method for inspecting a component comprising:

illuminating the component with off-angle lighting to increase the visibility of one or more types of features;

5   generating image data of the component; and

analyzing the image data to determine whether any of the one or more types of features are present.

13.   The method of claim 12 wherein illuminating the

10   component with the off-angle lighting comprises illuminating the component with a circular xenon flash lamp.

14.   The method of claim 12 wherein generating the image data of the component comprises generating an N x M

15   array of pixel data.

15.   The method of claim 12 wherein analyzing the image data to determine whether any of the one or more types of features are present comprises analyzing the image data to

20   determine whether a protrusion is present.

16.   The method of claim 12 wherein analyzing the image data to determine whether any of the one or more types of features are present comprises analyzing the image data to

25   determine whether a recess is present.

17.   The method of claim 12 wherein analyzing the image data to determine whether any of the one or more types of features are present comprises analyzing the image data to

30   determine whether a feature is missing.

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18.   The method of claim 12 wherein analyzing the image data to determine whether any of the one or more types of features are present comprises generating histogram data and determining whether the histogram data indicates that a

5   feature is present.

19.   The method of claim 12 wherein analyzing the image data to determine whether any of the one or more types of features are present comprises generating histogram data and

10   determining whether the histogram data indicates that a recess is present.

20.   The method of claim 12 wherein analyzing the image data to determine whether any of the one or more types of

15   features are present comprises generating histogram data and determining whether the histogram data indicates that a protrusion is present.

21. A system for inspecting components comprising:

an axial lighting system illuminating the component with axial lighting to allow one or more features of the

5   component to be located;

an off-axis lighting system illuminating the component with off-axis lighting in the absence of the axial lighting to allow the component to be inspected to locate one or more features; and

10   a dual lighting analysis system analyzing image data of the component created when the axial lighting system and the off-axis lighting system are both illuminating the component and generating component acceptance data.

15   22. The system of claim 21 wherein the dual lighting analysis system further comprises a band analysis system receiving edge data and generating band data.

23. The system of claim 21 wherein the dual lighting

20   analysis system further comprises an edge location system receiving pixel data and generating edge data.

24. The system of claim 21 wherein the dual lighting analysis system further comprise a feature analysis system

25   receiving band data and determining whether a feature is present.

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